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## MEASURING THE MACROSYSTEM

Measuring the macrosystem in post-accord Northern Ireland: A social-ecological approach

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### **Abstract**

The macrosystem refers to the overarching patterns that influence behavior at each level of the social ecology (Bronfenbrenner, 1977), making it a necessary component for assessing human development in contexts of political violence. This article proposes a method for systematically measuring the macrosystem in Northern Ireland that allows for a subnational analysis, multiple time units, and indicators of both low-level violence and positive relations. Articles were randomly chosen for each weekday in 2006-2011 from two prominent Northern Irish newspapers and coded according to their reflection of positive relations and political tensions between Catholics and Protestants. The newspaper data were then compared to existing macro-level measurements in Northern Ireland. We found that the newspaper data provided a more nuanced understanding of fluctuations in intergroup relations than the corresponding measures. This has practical implications for peacebuilding and advances our methods for assessing the impact of macro-level processes on individual development.

*Key words:* social ecology, macrosystem, newspaper data, Northern Ireland, intergroup conflict

**Measuring the macrosystem in post-accord Northern Ireland: A social-ecological approach**

Researchers have noted the importance of assessing the macrosystem to better understand the impact of political violence on human development (e.g., Cummings et al., 2013). Despite theoretical attention to the macrosystem in social-ecological research, empirical studies that incorporate systematic measurements of the macrosystem remain sparse. Disciplines outside of psychology have provided insight into the measurement and conceptualization of the macro-level. However, these approaches have limitations for assessing important elements of the macrosystem pertaining to the psychological impact of political violence. This study proposes a systematic macrosystem measurement that has implications for both psychological development and peacebuilding.

**Social-ecological Model**

Developmental research shows that individuals interact dynamically and continuously with their environment. Recognizing the interactions between individual and context as critical determinants of development, Bronfenbrenner proposed a social-ecological model to account for these multiple layers of influence (1977). This framework was conceived as a nested arrangement of structures. The outermost level is the macrosystem, which

refers to the overarching institutional patterns of the culture or subculture, such as the economic, social, educational, legal, and political systems . . . Macrosystems are conceived and examined not only in structural terms but as carriers of information and ideology that, both explicitly and implicitly, endow meaning and motivation to particular agencies, social networks, roles, activities, and their interrelations. (Bronfenbrenner, 1977, p. 515)

Though the macrosystem's influence on individual development is more complex than this model implies, research has shown that salient events in the outers systems tend to disrupt the environments in which individual development takes place (Cummings et al., 2013). The current study examines how the macrosystem can be assessed in settings characterized by political violence.

### **Macro-level Measures of Political Violence and Peacebuilding**

Interdisciplinary research provides different approaches to measuring the macrosystem. In particular, political science has developed datasets to analyze armed conflict. Although these datasets provide systematic information on war and organized violence over a wide range of years, which is useful for comparing violence between different nations across time, they also face constraints. First, most of these datasets use the nation-state as their unit of analysis, which makes it impossible to assess political violence at a subnational level or in cases of contested territories. Second, these datasets operationalize conflict using a threshold of battle-related deaths (e.g., 25/year) or acts of terrorism as indicators of violence, and they stop tracking change when violence falls below established thresholds. This makes it difficult to assess low-level violence or intergroup tensions. Finally, these datasets rely on indicators of negative peace (i.e., absence of overt conflict) rather than positive peace (i.e., justice, restoration of relationships). Although providing useful information about intergroup violence at the community-level, these metrics fails to account for positive advances in the peace process or intergroup relations over time.

To address these constraints, researchers may use large-scale surveys on individual attitudes, aggregating them on a regional or national level. However, since such data are derived from microsystem assessments, their conceptual adequacy as macrosystem measures is

debatable (Bronfenbrenner, 1977). Additionally, population-wide longitudinal surveys are expensive, and conflict settings may lack the resources for polling of this magnitude. Thus, alternative measures of change in the macrosystem are needed.

### **Current Study**

The Northern Ireland conflict serves as a useful context for introducing a new method of macrosystem measurement. First, because Catholic-Protestant tensions currently manifest through segregation, political intransigence, and low-level violence (Shirlow, Taylor, Merrilees, Goeke-Morey, & Cummings, 2013), existing macro-level datasets on armed conflict miss significant indicators of peace and conflict. Second, the Northern Ireland conflict requires a subnational analysis, which is lost in the state-level metrics that code the United Kingdom as a whole. Third, after the 1998 accord, the ongoing peace process necessitates indicators of progress in addition to conflict and violence. A macrosystem measurement in post-accord Northern Ireland accounting for these factors may improve evaluation of the social-ecological shifts that ultimately affect individual psychological functioning and behavior.

The current study proposes systematic coding of local newspaper reports about peace and conflict as a way to measure macro-level change in post-accord Northern Ireland. News organizations based in the region of conflict tend to have the most in-depth coverage of events and can be invaluable for highlighting the way discourse surrounding a conflict has been systematically produced and transmitted throughout society (Öberg & Sollenberg, 2011). Moreover, newspaper coding poses modest financial costs and can be applied retroactively using archived newspapers. This study compares newspaper coding with existing macro-level measurements for Northern Ireland.

### **Method**

## Procedures

**Article selection.** Local news articles were utilized as a method of assessing the macrosystem. Using Lexis Nexis, newspaper articles from 2006-2011 were randomly selected from *Belfast Telegraph* and *Irish News* – the two most circulated Northern Irish daily newspapers. A process of verification established that the following keywords identified all articles reflecting the Northern Ireland conflict and peace process: sectarian, paramilitary, crime, violence, IRA (Irish Republican Army), UVF (Ulster Volunteer Force), loyalist, republican, nationalist, unionist, UDA (Ulster Defence Association), SDLP (Social Democratic and Labour Party), DUP (Democratic Unionist Party), and Sinn Féin. From the pool of all identified articles, two were randomly selected per newspaper per weekday; thus, four articles were coded for each weekday during this period (N = 6,082).

**Coding procedure.** Sixteen students were recruited from the University of Ulster Magee Campus in Northern Ireland to serve as coders for the project. Each article was read by two Catholic and two Protestant students and rated according to several criteria, described below. Coder pairings were alternated every 250 articles using an adapted Latin square design to balance individual differences.

Common to studies that investigate topics related to perception, we used a “naïve” or “untrained” system of coding. In such studies, the use of manualized coding can inhibit the coder’s ability to detect subtle nuances of emotion and group dynamics hidden in the subtext (Schulz & Waldinger, 2005). By using lay observers who are native to Northern Ireland instead of trained coders, we were able to increase ecological validity by retaining the coders’ ability to apply intuitive judgments to the articles’ content and interpret culturally and historically embedded information.

**Inter-rater reliability.** Four coders rated each article, making it necessary to calculate inter-rater reliability. The intra-class correlation (ICC) was determined to be the most appropriate statistic because (a) it is suitable for Likert-scaled variables; (b) it can be applied when each article is rated by more than two coders; and (c) it accounts for the magnitude of agreement between coders rather than “all-or-nothing” agreement (Hallgren, 2012). We applied a two-way random effects model using average measures and absolute agreement. Since our research questions are based on the averaged rating across all four coders rather than the ratings of any single coder, the “average measures” unit of analysis is reported (Hallgren, 2012).

An ICC(2,k) coefficient was calculated for each set of 250 articles. ICC(2) refers to designs where the coders have been randomly selected from a larger population, and each coder rates each article. The “k” indicates a reliability index calculated by averaging the measurements of  $k$  number of raters. The coefficients were then averaged together to give a final ICC(2,k) of  $\alpha = 0.58$  for political tensions and  $\alpha = 0.68$  for positive relations. According to Cicchetti (1994), ICC coefficients between .40 and .59 have “fair” reliability, and between .60 and .74 have “good” reliability.

## Measures

**Newspaper coding (‘political tensions’ and ‘positive relations’).** These items derived from the newspaper coding dataset described above. For each article from the years 2006-2011, coders read the article and responded to the following questions: “How much do you think this article reflects (1) political tensions, (2) positive relations between Catholics and Protestants?” These constructs were rated separately, because an article could simultaneously indicate both political tensions and positive relations. Each question was rated along a 5-point Likert scale



from 0 (*not at all*) to 4 (*very much*), with higher scores indicating more tension or more positivity, respectively.

**Political Terror Scale.** The Political Terror Scale (PTS) measures the macrosystem at the state-level by rating the amount of political violence and terror that a country experiences each year (Gibney, Cornett, Wood, & Haschke, 2014). This study uses 2006-2011 PTS data for the United Kingdom. Codes indicate the level of political imprisonment, political murder, torture, and other human rights violations. They are scaled from 1 (*“Countries under a secure rule of law, people are not imprisoned for their view, and torture is rare or exceptional. Political murders are extremely rare”*) to 5 (*“Terror has expanded to the whole population. The leaders of these societies place no limits on the means or thoroughness with which they pursue personal or ideological goals”*).

**Sectarian hate crimes.** The Northern Ireland Statistics and Research Agency (NISRA) measures the macrosystem at a regional level using annual crime statistics based on information collected from the public, police forces, and regional agencies (NISRA, 2012). This measure captures the number of sectarian hate crimes (i.e., any incident perceived as being sectarian by the victim or any other person) reported to the Police Service of Northern Ireland from 2006-2011.

## Results

A series of descriptive analyses was conducted to examine how these different approaches capture changes in the macrosystem. Figure 1 compares political tensions perceived in news reports to two other measures of the macrosystem: the Political Terror Scale (PTS) (national measure of terror in the UK) and Sectarian Crime (regional measure of sectarian crime in Northern Ireland). The only variability in the national measure (PTS) occurs between 2009

and 2010 when the UK's total amount of political imprisonment, torture and political murder decreased. Regionally, police reports of sectarian crime show slightly more variability across the years with crime decreasing from 2006-2008 before a sharp increase in 2009 and subsequent decrease through 2011. However, the newspaper coding shows a different trend. Political tensions between Catholics and Protestants remained low in 2009 and peaked in 2010. While the PTS and sectarian crime suggest that intergroup violence decreased in 2010-2011, the newspaper coding suggests that intergroup tensions increased during these years. A more nuanced measure of political tensions captures dynamics that are overlooked by macro-level datasets focused only on the most violent forms of terrorism or crime.

Figure 2 compares items from the newspaper coding, showing changes in political tensions and positive relations. Rather than looking at the yearly averages for these items, it shows the monthly averages across all six years. Figure 2 indicates that positive relations between Catholics and Protestants generally increase from March through May before steadily decreasing throughout the summer months and reaching a low point in August. Political tensions show less variability, increasing slightly from March through June and gradually decreasing throughout the rest of the year. Depicting political tensions and positive relations separately can demonstrate how each variable changes across time and how they may differentially affect individual development in Northern Ireland.

### **Discussion**

This study proposes a method for systematically measuring the macrosystem in post-conflict Northern Ireland. The findings suggest that newspaper coding may contribute insights about the macrosystem that differ from existing datasets. In addition, it can incorporate both

positive and negative indicators of intergroup relations, and allow for the assessment of macrosystem change across different units of time.

The trends in newspaper coding differed from macro-level datasets focused exclusively on political terror and sectarian crime (Figure 1). The newspaper coding showed high political tensions as PTS and sectarian crime decreased. One explanation is that the newspaper coding captured low-intensity conflict as paramilitary violence shifted to community tensions. While the PTS and sectarian crime focus only on violent crime and human rights abuses, the newspaper coding accounts for violent activity as well as the broader discourse surrounding parades, protests, political intransigence, and reflections on the past. These factors, which are essential aspects of the macrosystem, were missed by existing measures.

As a comparative advantage to other macrosystem measures, newspaper coding can assess shifts in the political climate across various time units (i.e., daily to yearly averages; monthly averages within years). For example, averaging the newspaper coding by month shows how political tensions and positive relations tend to fluctuate throughout the year (Figure 2). Every spring, Northern Ireland reports increased positive relations between Catholics and Protestants, but it is consistently undone during the summer parading season and its celebrations of in-group heritage. Newspapers contain information about local tensions surrounding the parades even when there is no violence. Understanding these seasonal patterns in the macrosystem may inform the timing of interventions. Further, gauging positive advances in the peace process can provide as much information as items that emphasize crime or violence, and may suggest when to target peacebuilding efforts. Including both positive and negative peace indicators allows for a more thorough understanding of conflict transformation occurring in the macrosystem.

The limitations of this method merit consideration. Newspaper reports are useful for studying macro-level dynamics in a society; yet, the choice of newspapers needs to be carefully considered across contexts to make sure the information is representative of the political climate, particularly in cases of state-controlled media. In addition, although naïve coding confers multiple benefits, the lack of a manualized system makes the coding process time-intensive and requires the articles to be coded by individuals who are native to the culture.

Future directions include assessing the macrosystem in relation to other levels of the social ecology to evaluate the broader impact of political violence, as well as conducting a discourse analysis on the content of the newspaper articles to deepen our understanding of these trends. In conclusion, systematic newspaper coding can be an effective means of measuring the macrosystem, extending our understanding of how the political climate shifts over time and ultimately affects individual functioning.

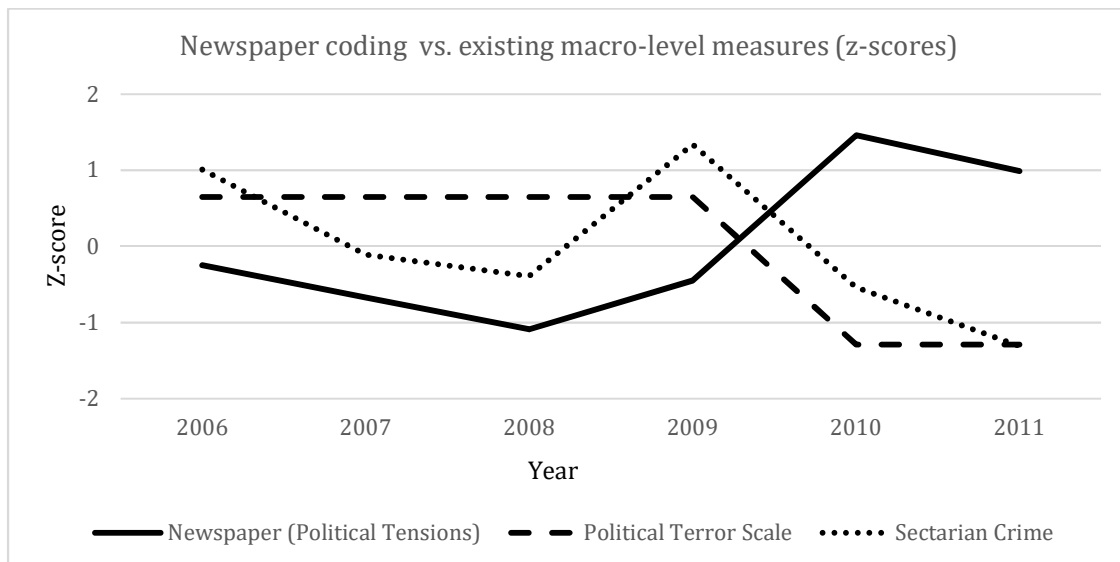
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*Figure 1.* Comparison of the newspaper coding with existing macro-level measurements for Northern Ireland (2006-2011). Each scale has been standardized by converting data into z-scores.



*Figure 2.* Seasonal fluctuations in political tensions and positive relations between Catholics and Protestants as reflected in the newspaper articles, averaged by month, 2006-2011.

